UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,824	12/21/2000	Martin Quanz	114750.1600	6581

27160 7590 07/30/2002

PATENT ADMINSTRATOR
KATTEN MUCHIN ZAVIS ROSENMAN
525 WEST MONROE STREET
SUITE 1600
CHICAGO, IL 60661-3693

EXAMINER	
PRATS, FRANCISCO CHANDLER	
ART UNIT	**PAPER NUMBER**
1651	

DATE MAILED: 07/30/2002 14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/740,824	QUANZ ET AL.	
	Examiner	Art Unit	
	Francisco C Prats	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-23,25 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-23,25 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *13* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The amendment filed May 13, 2002, has been received and entered. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.

Claim 24 has been cancelled.

Claims 25 and 26 have been added.

Claims 9-23, 25 and 26 are pending and are examined on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitations "a purity of at least 80%", "a purity of at least 90%" and "a purity of at least 95%", in claim 14 as amended and new claims 25 and 26, are indefinite because it is not clear how pure the enzyme must be. Specifically, it is not clear whether the recitation requires a weight percentage or a

molar percentage, or a percentage of a particular specific activity. Note specifically that enzyme purity is generally denoted by a specific activity, that is, measured by the rate of substrate conversion per milligrams of total protein in the enzyme preparation. Because the absolute percentages in the quoted language are not based on any ascertainable criteria currently on record, it is respectfully submitted that the recitations must be considered indefinite under § 112, second paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35

U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-15 and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kossman (WO 95/31553).

Kossman discloses a process of preparing insoluble polysaccharides by contacting sucrose with an amylosucrase under aqueous conditions. *See* p. 24. Kossman discloses that the enzyme should be obtained from the claimed microorganism, *Neisseria polysaccharea* (*see* p. 5), can be produced recombinantly (*see* p. 11), can be used in purified form (*see* p. 24), and can be used in immobilized form (*see* p. 25). Thus, Kossman differs from the cited claims only in that Kossman does not employ the enzyme under buffer-free conditions.

However, Kossman clearly discloses that the enzyme is useful at neutral conditions. *See* Example 4 at page 35, wherein the enzyme is employed at pH 6.5. Thus, the artisan of ordinary skill, recognizing from Kossman that the enzyme is active at neutral conditions which do not require the addition of a buffer, clearly would have motivated to have omitted the step of adding a buffer to the reaction medium disclosed by Kossman. By omitting the addition of buffer, the artisan of ordinary skill would have made the process easier by omitting a step, and also would have made the process cheaper by omitting the expense of a

buffer. Further still, the artisan of ordinary skill clearly had a reasonable expectation that the process would work in the absence of a buffer, based on the fact that the Kossman discloses the enzyme as functioning at neutral conditions. A holding of obviousness is therefore required.

Claims 9-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kossman (WO 95/31553) as applied to claims 9-15 and 20-24 above, and further in view of Remaud-Simeon (Carbohydrate Bioengineering 1995:313-320).

As discussed above, Kossman renders obvious the process recited in claims 9-15 and 20-24. Kossman differs from the claims in that Kossman does not disclose the addition of a polysaccharide acceptor which may be dextrin, glycogen or amylopectin. However, Remaud-Simeon clearly discloses that glycogen, starch (which contains amylopectin) and maltooligosaccharides act to activate amylosucrase when they are added to the reaction medium. Thus, the artisan of ordinary skill clearly would have been motivated to have added glycogen and amylopectin to the reaction medium to have afforded the activating effect disclosed by Remaud-Simeon. Moreover, in view of the fact that dextrins are very similar chemically to the compounds disclosed by Remaud-Simeon as having an activating

effect on amylosucrase, the artisan of ordinary skill clearly would have had a reasonable expectation that dextrins would have had the same activating effect on amylosucrase as glycogen, starch (which contains amylopectin) and maltooligosaccharides. The artisan of ordinary skill would therefore have been motivated to have added dextrin to the reaction medium used for the production of glucans by amylosucrase. A holding of obviousness is therefore clearly required.

Response to Arguments

All of applicant's argument has been fully considered but is not persuasive of error. It is noted, as argued by applicant, that in addition to setting the pH, buffers are used in enzymatic reactions to ensure that pH remains constant during the reaction period, as well as to adjust the osmolarity of the reaction medium. However, in the instant case the enzyme is known to be optimally active at neutral pH. Thus, one of ordinary skill in the art would recognize that a buffer need not be added to the reaction medium because, even without the presence of a buffer, the aqueous reaction medium in Kossman is already at the pH required for optimal enzyme activity. Moreover, there is nothing in the reference suggesting that conducting the reaction in the absence of a buffer would result

in an undesirable pH shift. Further still, applicant's claims do not require a specific yield or duration for the reaction. Thus, even if the artisan of ordinary skill expected a buffer-free reaction to work less efficiently that a buffered reaction, the artisan of ordinary skill viewing Kossman still would have had a reasonable expectation that the buffer-free reaction medium would have produced the α-glucans as recited in the claims. It is therefore respectfully submitted that the rejections of record must be maintained.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C Prats whose telephone number is 703-308-3665. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Francisco C Prats
Primary Examiner
Art Unit 1651

FCP
July 26, 2002